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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte WOLFGANG MAUS

Appeal 2011-001448
Application 10/763,027
Technology Center 1700

Before ADRIENE LEPIANE HANLON, CHUNG K. PAK, and
LINDA M. GAUDETTE, *Administrative Patent Judges*.

HANLON, *Administrative Patent Judge*.

DECISION ON APPEAL

A. STATEMENT OF THE CASE

This is a decision on appeal under 35 U.S.C. § 134 from an Examiner's final rejection of claims 1-4 and 6-29.[1] We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

The subject matter on appeal is directed to a honeycomb body for use in an exhaust system of an internal combustion engine wherein the body comprises a housing and a metallic matrix having an average initial diameter. The Appellant discloses that honeycomb bodies of this type serve as catalyst carrier bodies for cleaning exhaust gases of a diesel engine or spark-ignition engine. Spec. 1:12-18.

According to the Appellant's Specification, it is known that the metallic honeycomb bodies in exhaust systems of internal combustion engines are exposed to high, thermal alternating stresses. *Id.* at 1:20-22.

> [T]ests have shown that because of the different cooling behavior in edge regions and in core regions of the matrix, after repeated thermal alternating stresses known metallic honeycomb bodies no longer assume their original, in particular cylindrical shape, but rather reduce their volume and have a contour similar to a barrel. This has the effect, for example, that a relatively large annular gap is formed between the matrix and the housing, through which, in particular during operation of the honeycomb body in the exhaust system of an internal combustion engine, the uncleaned exhaust gas flows and, in consequence, effective cleaning in accordance with legal regulations cannot be ensured.

Id. at 3:4-15.

[1] An oral hearing was held on November 9, 2011.

The Appellant discloses that an object of the invention is to provide a honeycomb body having a contraction limiter that ensures an effective conversion of pollutants in the exhaust gas even after the honeycomb body has been subjected to a multiplicity of thermal alternating stresses. *Id.* at 3:18-24. In particular, the contraction limiter causes an outwardly directed tensile stress in at least one part of the matrix, so that the average initial diameter of the matrix decreases by at most 5% during and/or after a thermal stress. *Id.* at 4:4-9.

Claim 1, reproduced below, is directed to a honeycomb body comprising, *inter alia*, at least one contraction limiter.

> 1. A honeycomb body, comprising:
>
> a housing;
>
> a matrix having an average initial diameter and connected to said housing; and
>
> at least one contraction limiter configured for imparting an outwardly directed tensile stress in at least one part of said matrix for preventing the average initial diameter of said matrix from decreasing by more than 5% after repeated thermal alternating stresses in the range between 600ºC and 1050ºC.

App. Br., Claims Appendix.[2]

The Appellant seeks review of the following rejections:

(1) the rejection of claims 1-4, 6, and 8-27 under 35 U.S.C. § 102(b) as anticipated by Ota[3] as evidenced by Stroom[4] and http://www.matweb.com[5]; and

[2] Appeal Brief dated March 29, 2010.
[3] US 5,486,338 issued January 23, 1996.
[4] US 6,245,301 B1 issued June 12, 2001.

(2) the rejection of claims 1, 7, 28, and 29 under 35 U.S.C. § 102(b) as anticipated by Maus.[6]

B. DISCUSSION

The Examiner contends that Ota discloses a honeycomb body comprising a housing, a matrix, and at least one contraction limiter (i.e., cushion members 5, 9a, 9b, 10, 11) as recited in claim 1. Ans. 4.[7] Likewise, the Examiner contends that Maus discloses a honeycomb body comprising a housing, a matrix, and at least one contraction limiter (i.e., connecting tube 11) as recited in claim 1. *Id.* at 7-8.

The Appellant argues that the cushion members disclosed in Ota are not "contraction limiters" as recited in claim 1 because the cushion members do not impart an outwardly directed tensile stress on the matrix. App. Br. 5. The Appellant also argues that the connecting tube of Maus does not limit contraction because the gaps (13, 14) between the housing and the matrix are "very wide." *Id.* at 13. The Examiner disagrees with both arguments. *See* Ans. 8-11.

Assuming for the sake of argument that the cushion members of Ota and the connecting tube of Maus do impart some degree of outwardly directed tensile stress on the respective matrices, claim 1 also recites that the contraction limiter:

> impart[s] an outwardly directed tensile stress in at least one part of said matrix *for preventing the average initial diameter of said matrix from decreasing by more than 5% after repeated thermal alternating stresses in the range between 600°C and 1050°C.*

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[5] Data Sheet for 301 Stainless Steel, http://www.matweb.com/search/DataSheet.aspx?MatGUID=0cf4755fe3094810963eaa74fe812895&ckck=1 (last visited Nov. 15, 2011).
[6] US 5,916,530 issued June 29, 1999.
[7] Examiner's Answer dated June 11, 2010.

App. Br., Claims Appendix (emphasis added).

The Examiner has taken the position that the limitation of "repeated thermal alternating stresses in the range between 600°C and 1050°C" is a process limitation and is entitled to little weight in apparatus claim 1. Ans. 4. However, the Examiner's position is erroneous. The limitation is not a process limitation but rather defines a property of the contraction limiter, i.e., the contraction limiter "prevent[s] the average initial diameter of said matrix from decreasing by more than 5% after repeated thermal alternating stresses in the range between 600°C and 1050°C." App. Br., Claims Appendix. This property is achieved by a combination of at least the material and the configuration of the contraction limiter.

The Examiner contends that "after the matrix [of Ota and Maus] has been through multiple repeated thermal stresses . . . the average initial diameter will still be the same."[8] Ans. 4, 8. However, the Examiner does not direct us to any evidence that supports this position.[9]

Significantly, the Examiner has not directed us to any evidence which demonstrates that any outwardly directed tensile strength imparted by the cushion members of Ota and/or the connecting tube of Maus "prevent[s] the average initial diameter of [the respective matrices] from decreasing by more than 5% after

[8] We understand the "initial diameter" recited in claim 1 to be a reference point that is used to measure the change in diameter of the matrix after repeated thermal alternating stresses.

[9] On pages 4-5 of the Examiner's Answer, the Examiner relies on evidence in Stroom and http://www.matweb.com to establish that "the increase (and subsequent decrease) in the diameter of the honeycomb matrix [of Ota] would amount to . . . ~1%." However, on page 10 of the Examiner's Answer, the Examiner indicates that reliance on this evidence was erroneous.

repeated thermal alternating stresses in the range between 600°C and 1050°C." For this reason, the § 102(b) rejections are reversed.

C. DECISION

The decision of the Examiner is reversed.

REVERSED

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